REMARKS

Applicants thank the Examiner for the courtesy extended to Applicants' attorney and Applicants' assignee's representative during the interview held June 24, 2003, in the above-identified application. During the interview, Applicants' attorney explained the presently-claimed invention and why it is patentable over the applied prior art, and discussed other issues raised in the Office action. The discussion is summarized and expanded upon below.

The present invention relates to a method of using aqueous compositions based on aqueous polymer dispersions as a basecoat for metal components.

As described in the specification beginning at page 1, prenumbered line 10, metal components, especially shaped parts of sheet metal, are frequently coated for various reasons. Such coated metal parts are frequently subjected to various severe mechanical forces and stresses leading to various problems, such as delamination, i.e., the coating delaminates from the metal surface. The present invention addresses these problems.

As recited in above-amended Claim 1, the invention is a method of coating a metal component by applying a first coating composition to a surface of the component as to provide a basecoat and then applying at least one further coating composition to the surface provided with the basecoat, which comprises selecting the first coating composition from aqueous compositions, which comprise:

i) at least one aqueous polymer dispersion comprising at least one addition polymer P, which has a glass transition temperature below 0°C and contains in copolymerized form

- from 80 to 99.5% by weight of at least one monoethylenically unsaturated, hydrophobic monomer A,

- from 0.5 to 10% by weight of at least one monoethylenically unsaturated monomer B selected from monocarboxylic acids, dicarboxylic acid and their anhydrides, and if desired
- from 0 to 10% by weight of one or more ethylenically unsaturated monomers C, different than the monomers A and B, the weight fractions of the monomers A, B and C adding up to 100% by weight,

ii) at least one water-soluble oxide, hydroxide, salt or complex salt of an at least divalent metal cation.

Applicants have provided comparative data in the specification which shows that with the present invention, i.e., wherein the first coating composition is applied as a primer, resistance to delamination is significantly better compared to the use of primer compositions not containing the presently-recited component ii), even when the glass transition temperature of the addition polymer is below 0° C. See dispersion VD5, at Table 1 at page 23 of the specification. VD1 through VD5 are comparison dispersions; ED1 and ED2 are according to the invention. Table 2, which shows the results of testing described at page 25, line 12ff, at pages 25-26 of the specification, is reproduced as follows:

Table 2: Results of performance testing

Example	First composition/ dispersion	Second formulation/ dispersion	Delamination
V1	VD1	D6	4
V2	VD2	D6	4
V3	VD3	D6	4
V4	VD4	D6	4-5
V5	VD3/VD5	D6	3
B1	ED1	D6	1
B2	ED2	D6	1
B3	ED1	D7	1
B4	ED2	D7	1

V1-V5 are for purposes of comparison; B1-B4 are according to the invention. The above-discussed comparative results could not have been predicted by the applied prior art.

The rejection of Claims 1-9 and 11-15 under 35 U.S.C. § 103(a) as unpatentable over U.S. Patent No. 6,291,018 (Dattilo) and incorporated by reference U.S. Patent No. 5,196,485 (McMonigal et al) in view of U.S. Patent No. 4,826,907 (Murao et al), is respectfully traversed. Dattilo is drawn to a method of forming a composite coating having a polychromatic effect over a substrate. Dattilo's invention involves a drying technique for drying a first liquid base coat material prior to applying a second liquid base coat material. Particularly, the first base coat is dried in a drying chamber having a temperature between about 50° F and 90° F, a relative humidity of about 40 to 80% and an air velocity of about 20 to 150 FPM, for a period of about 10 to 180 seconds (column 2, lines 10-19). Dattilo discloses that his first base coat material preferably comprises a crosslinkable coating composition comprising at least one thermosetting film-forming material such as, *inter alia*, acrylics and at least one crosslinking material (column 4, lines 19-24). Dattilo describes a number of suitable acrylic polymers and also makes reference to McMonigal et al (column 4, lines 39-42). Neither Dattilo nor McMonigal et al suggests the presence of at least one water-soluble oxide, hydroxide, salt or complex salt of an at least divalent metal cation. The Examiner thus relies on Murao et al. Murao et al discloses an (meth)acrylic resin emulsion coating composition useful as a coating material for protecting outside sheet metal parts of vehicles such as an automobile from pebbles or stones (column 1, lines 5-13), the composition comprising a blended mixture composed of:

> (1) 100 parts by weight as solid resin content of a copolymer resin emulsion [A], the copolymer resin therein having a glass transition temperature Tg(A), determined by the DSC method, of about -10° to about -50° C, and said copolymer resin emulsion [A] being an aqueous emulsion-copolymerization product being free from a copolymerizable diallyl component and derived from 95 to 99.5% by weight of at least one monomeric ester (a) of acrylic and/or methacrylic acid having no carboxyl group in its molecular and 0.5

> and 5% by weight of at least one alpha, beta-unsaturated carboxylic acid (b) in the presence of, as a nonionic surface-active agent, a polyoxyethylene/polyoxypropylene block copolymer,
>
> (2) 20 to 300 parts of weight as solid resin content of a copolymer emulsion [B], the copolymer resin therein having a glass transition temperature Tg(B), determined by the DSC method, of less than 0° C., and satisfying the following equation
>
> $$Tg(B)-Tg(A)=10^{\circ} \sim 55^{\circ}C$$
>
> and said copolymer resin emulsion [B] being an aqueous emulsion-copolymerization product being free from a copolymerizable diallyl component and derived from 95 to 99.5% by weight of at least one monomeric ester (a)' of acrylic and/or methacrylic acid having no carboxylic group in its molecule and 0.5 to 5% by weight of at least one alpha, beta-unsaturated carboxylic acid (b)' in the presence of, as a nonionic surface-active agent, a polyoxyethylene/polyoxypropylene block copolymer, and
>
> (3) about 0.2 to about 10 parts by weight, based on the total weight as solid resin content of emulsions [A] and [B], of a water-soluble polyvalent metal salt (C) of an inorganic or organic acid, the metal salt (C) having a solubility of at least 5 when it is expressed as the grams of said metal salt dissolved in 100 g of water at 20°C. (column 1, line 30, to column 2, line 2).

Murao et al discloses that the above combination of the polyoxyethylene/polyoxypropylene block copolymer nonionic surface active agent and water-soluble polyvalent metal salt is essential therein (column 6, lines 29-34). While said polyoxyethylene/polyoxypropylene block copolymer nonionic surface active agent is necessary, Murao et al discloses that other nonionic surfactants, cationic surfactants and ampheteric surfactants may be used jointly (column 7, lines 52-55). Murao et al discloses and suggests nothing with regard to the use of an anionic surfactant in the preparation of either their copolymer resin emulsion [A] or their copolymer resin emulsion [B]. Thus, new Claim 16 is separately patentable.

Without the present disclosure as a guide, it is not clear why one skilled in the art would combine Dattilo, McMonigal et al and Murao et al. Nevertheless, even if combined, the result would not be the presently-claimed invention. While Murao et al does disclose its

coating composition for coating metals, their coating is intended for protecting the **outside** surface of articles to prevent chipping. Such a benefit would be lost if used as a first base coat, i.e., as a primer, to be subsequently coated. Moreover, for new Claim 16, even if the coating composition of Murao et al were used as the acrylic polymer-based first base coat material of Dattilo, the result would not be the presently-claimed invention, which requires that the addition polymer P be prepared in the presence of at least one anionic emulsifier. Murao et al teaches against the use of anionic emulsifiers, as such emulsifiers are conspicuously absent from the types of emulsifiers that Murao et al discloses can be used with their required polyoxyethylene/polyoxypropylene block copolymer nonionic surfactant.

During the above-referenced interview, the Examiner appeared to be skeptical of counsel's argument that Murao et al requires their coating to be an outside coating. This aspect is now further emphasized.

Murao et al discloses that their coating composition as a mastic paint, an anti-noise paint, an anti-vibration paint, or a caulking material (column 12, line 3 ff). Such utilities would not be achieved by applying Murao et al composition as a base coat, covered with a subsequent top coat. Additionally, Murao et al discloses that their coating has, *inter alia*, gasoline and hot water resistance, and prevention of cratering during coating (column 4, line 24ff). These properties are **outside** coating properties, because only outside coatings are exposed to gasoline, water or other chemical stress. Murao et al further discloses that their composition is applied to an electrodeposition-coated surface, an intermediate-coated surface or a top-coated surface (column 12, line 24 ff), but never to the metal itself. Indeed, to achieve the anti-chipping properties desired, Murao et al's coating **must** be applied as an exterior coating because the coating is required to prevent scratches and other mechnical impacts.

For all the above reasons, it is respectfully requested that this rejection be withdrawn.

The rejection of Claims 1-10, 14 and 15 under 35 U.S.C. § 103(a) as unpatentable over JP 52-93122 (Ishikawa) in view of Murao et al, is respectfully traversed. Ishikawa discloses a coated metal plate comprising a base plate such as surface-treated steel, a resin coating, a granule layer and an outer resin coating. The resin coating may be, *inter alia*, of an epoxy resin, polyester resin, acrylic resin and urethane resin. Murao et al and its deficiencies have been discussed above. One skilled in the art would not have used the coating composition of Murao et al as the base coating in Ishikawa for the same reasons that one skilled in the art would not have used the coating composition of Murao et al as the first base coat material in Dattilo, as discussed above. Accordingly, it is respectfully requested that this rejection be withdrawn.

The objection to the specification at paragraph 1 of the Office Action is respectfully traversed. It is clear from the specification as filed that Applicants intended the word "salt" to also include oxides and hydroxides. The claims are now consistent with the disclosure. Accordingly, it is respectfully requested that the objection be withdrawn.

Applicants note the copy of the Form PTO-1449, filed April 12, 2002, attached to the Office Action, wherein the Examiner crossed-out reference AW. This is improper, since reference AW, even though not in English, was submitted with a statement of relevancy, which indicated that reference AW is discussed in the specification. (See the specification at page 2, prenumbered lines 31-33.) According to MPEP § 609, discussion in the specification meets the concise explanation requirement. **Submitted herewith** is another copy of the above-discussed Form PTO-1449. The Examiner is respectfully requested to initial said form, and include a copy with the next Office communication.

All of the presently-pending claims in this application are now believed to be in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to pass this application to issue.

Respectfully submitted,

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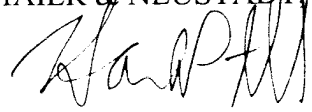

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